

The Timex/Sinclair NorthAmerican User Groups Newsletter

FROM OUT OF 'THE ASHES' RISES >>>> ZXir QLive Alive! <<<<

Timex/Sinclair NorthAmerican User Groups
Volume I, Number 2

Auburn, Indiana
Summer 1991

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T/SNUG CHAIRMEN

Here is the list of 1991 T/SNUG Chairmen and how to contact them. We wish to support the following SIGS: ZX80/ZX81, 288, SPECTRUM/TS2068/TC2068 and QL. If you have questions about any of these fine machines contact the Chairman.

POSITION	NAME	PBONE	PRIMARY FUNCTION
Chairman	Don Lambert	219-925-1372	Chief Motivator
Vice-Chairman	Dave Bennett	717-774-7531	CATS/288
Vice-Chairman	Al Feng	708-971-0495	CATUG/QL
Vice-Chairman	Rod Gowen	503-655-7484	CCATS
Vice-Chairman	Bill Harmer	613-722-7184	TS Bulletin/ZX80/ZX81
Vice-Chairman	Rod Humphreys	604-931-5509	VSUG/TS2068
Vice-Chairman	Bob Swoger	708-837-7957	Newsletter/3BS Sysop

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T/SNUG Information

ZXir QLive Alive! (pronounced Sir Clive Alive!) is the newsletter of T/SNUG, the new Timex/Sinclair NorthAmerican User Groups. T/SNUG is not a user group but rather all the user groups. We wish to represent all of the North American TIMEX/Sinclair user groups by providing news about all that is going on in the T/S community in at least four newsletters a year.

It is our goal to either build a Public Domain software library or develop a list of available software for all T/S machines showing the source.

We shall try to keep vendors alive by offering free space in this newsletter. Vendors shall receive this newsletter free so that they may see that we are still out here. If you feel that T/SNUG should perform other tasks, let us know your feelings.

T/SNUG wishes to have one chairman from every T/S North American user group who will take charge of sending us your user groups newsletter and other correspondence.

If you desire to reprint any articles that appear here, please provide credit to the author and this newsletter.

Articles appearing in this newsletter can be obtained by downloading this newsletter from our BBS. We encourage your user group to copy this newsletter and distribute it at your regular meetings to all of your members.

For an annual contribution of \$12.00 for individuals or \$15.00 for user groups, you can keep T/SNUG alive! For now, send your contribution to:

DON LAMBERT
ZXir QLive Alive! Newsletter
1301 KIBLINGER PL
AUBURN IN 46706

ZXir QLive Alive! Article Contributions

If you would like to contribute an article to the newsletter, upload a file to our BBS called TSNUG.ART. If you have an AD for the newsletter UPLOAD a file called TSNUG.ADS. If you have NEWS to POST about your group, UPLOAD a file called TSNUG.NWS.

If you need help contact the SYSOP by mail, E-MAIL on the T/SNUG BBS, or by phone:

BOB SWOGER
613 PARKSIDE CIRCLE
STREAMWOOD IL 60107-1647

It is preferred that you call:
H708/837-7957 or W708/576-8068

If you can only contribute hard copy, tape or disk format, send your inputs to:

DON LAMBERT
ZXir QLive Alive! Newsletter
1301 KIBLINGER PL
AUBURN IN 46706
Tala: 219-925-1372

It is not necessary to call before sending articles.

CONTRIBUTORS TO THIS ISSUE

Tony Farrell
Al Feng
Joan Kealy
Don Lambert
EMSoft
Bob Swoger, K9WVY
Tim Ward
Tony Willing

INPUT/OUTPUT

NEWSLETTER EXCHANGE

We have been asked if we could EXCHANGE newsletters with other groups. Since T/SNUG is not a group but is rather supported by all the groups, it can not EXCHANGE newsletters with groups. Each supporting group gets a copy of this newsletter.

What might be better in this area would be to print the

newsletters of all our member groups so that those groups would no longer have to bare the cost of newsletter exchanges. The group fee would go up a bit to cover the new load on T/SNUG and the starting date for this activity would have to be co-ordinated. Let us know what you think.

ABOUT CENSORSHIP

One of our articles contains a statement from Al Peng towards Paul Holmgren which may be thought of as a businessman protecting his business from competition. From what we hear, Paul and Frank Davis do sell quite a bit of QL software. We could censor that portion of the article but then, where do we stop censorship? If Paul feels put out, he should write a rebuttal to the observation. [Swoger was present with Peng at the time when the discourse occurred and can attest to what happened]

MAILING

We believe we have enough funds in the treasury to mail to ALL the user groups although we have only heard from just a few. Therefore, the second mailing shall be to all the known user groups, all known vendors and all paid individual members.

!!!!!! H E L P !!!!!!!
The need for T/SNUG to compile a list of available software is now evidenced by the request from Rod Gowen for a copy of CARTRIDGE DOCTOR for the QL. A corrupted copy needs repair and no one at CATUG has it. If you can help send a copy to Rod Gowen at RMG.

MILE HIGH TO RETURN

We have received a call from Andy Hradesky of TIMELINEZ. He has recently relocated to the Denver area and will attempt to reform the MILE HIGH Users Group. [we are coming alive!] The address for contact is:

MILE HIGH c/o CURT CARSON
601 S GRANT ST
DENVER CO 80209

BILL FERREBEE OVERWHELMS US!
Bill Ferreebe of Mountaineer Software, who normally writes for COMPUTER MONTHLY, put down his pen and kindly ran our kick-off column in the July '91 issue. Bill, you must really have faith in us! Words just aren't enough, we really appreciate it. We will do all we can to try to earn it.

T/SNUG MEETINGS

The next possible meeting will be at the DMA ComputerFest at Dayton on August 24th and 25th. No time has been set but it is expected that it will be decided at the Fest. ISTUG, CATS, SMUG and CATUG will all be there.

FROM THE CHAIRMANS DISK

Things are happening, and with joy I report that it looks good for T/SNUG. There are two items to report:

1. VSUG sent in \$15.00 to support T/SNUG and also -- sent a contribution of \$150.00 to help T/SNUG with postage and other expenses. When I opened the envelope and saw the check, at first I was puzzled. Was it \$165.00, or \$1.65 or \$16.50?? I hastily read the letter and sure enough it was for \$165.00! When I called Bob Swoger, I am sure he was as stunned as I was. Once again our Canadian friends have overwhelmed us. VANCOUVER SINCLAIR USERS GROUP, thank you very much!

2. While my subscription copy of Computer Monthly has not arrived yet, I have had two people send in their \$12.00 each for a subscription to ZXir QLive Alive!. They both mentioned Computer Monthly and Bill Ferreebe's column as their source of information on the newsletter. Thank you, Bill, for listing us. Hopefully, that is the start of several such letters.

Note the small change in our name. In the first issue we called ourselves 'Users Group'.

We shall call ourselves 'User Groups' from now on. T/SNUG is indeed the voice of the total NorthAmerican user groups!

The DMA will be having a Computer Fest at the Hara Arena and Conference Center in Dayton Saturday and Sunday, August 24th and 25th, 1991. We talked to Gary Ganger of Sinclair fame and found out that they are to group all the Sinclair groups together if we send our table requests to Gary. Here is a reprint from the SMUG newsletter:

"If you are planing on having a table, send your money by the end of June. I hope we have a large contingent of Sinclair Users. Gary said the user group/flea market tables will not have a wall but will be in the center of the hall.

OK, here are the costs: If you choose to go, to all you who want to go the big professional way, you can get a 10' x 10' both with two draped tables and two chairs for only \$150, \$175 after June 30. This also includes Friday night set up and tickets for the show.

The user group way, also known as the flea market, is a little different. For \$20, \$25 after June 30, you can get a 6' x 8' table space with one chair. You will have to purchase your own tickets, at \$5 each, for both days, and if you want to set up on Friday night the extra cost is \$25. Also there will be a banquet Friday night. This will cost \$13.50. Gary says they are looking for a name speaker. Gary also says that Friday night set up is not necessary as the vendors will be able to get in at 6 am with the show opening to the public at 10 am. Gary Ganger's home address is: 812 HEDWICK ST, NEW CARLISLE OH 45344-2619. All tables have electricity."

So far CATS, CATUG, ISTUG, NESQLUG, SMUG and T/SNUG are planning on being there. Get your inputs to Gary Ganger before June 30th for the best

prices on tables.

Don Lambert, Chairman
Timest/Sinclair NorthAmerican
Users Group

SYSOP's TWISTED PAIR

Our 24 Hour BBS has crashed and when it will be back again is unknown. To accomplish any UPLOAD or DOWNLOAD activity, contact Bob Swoger:
H708/837-7957 or W708/576-8068

TREASURY NOTES

There have been 5 deposits totalling \$390. There were 2 checks written for the first mailing for \$69.01. The balance as of 7/15/91 is \$320.99.

The current paid membership stands at 4 groups and 15 individuals.

Please include your ZIP+4 code when you renew your membership. It will speed up the mailing. Thank you!

NEWS ITEMS

DAYTON ComputerFest August

Gary Ganger is putting the T/S community together at the DMA ComputerFest '91. The dates are Saturday August 24, 10 AM - 6 PM and Sunday August 25, 10 AM - 5 PM. Tickets for both days are \$5 in advance and \$6 at the door. The event is at the HARA Conference and Exhibition Center, 1001 Shiloh Springs RD, Dayton, Ohio

Contact Gary Ganger if you are going to the fest.

GARY GANGER
812 HEDWICK ST
NEW CARLISLE OH 45334-2619
Call H513-849-1483

So far CATS, CATUG, ISTUG, NESQLUG, SMUG and T/SNUG are planning on being there.

LIBRARY

TIMEX/SINCLAIR
PUBLIC DOMAIN LIBRARY
AVAILABLE AS OF 01 JUNE 1991

TS-1000
(364/386 PROGRAMS IN
RESPECTIVE LIBRARIES)

Tapes (C-60)
1001 (#10001-10050)
1002 (#10050-10121)
1003 (#10122-10175)
1004 (#10176-10210)
1005 (#10211-10251)
1006 (#10252-10293)
1007 (#10294-10335)
1008 (#10336-10364)

LarKen disks (5.25" TS1000)
1001 (#10001-10040)
1002 (#10041-10092)
1003 (#10093-10144)
1004 (#10145-10187)
1005 (#10188-10214)
1006 (#10215-10250)
1007 (#10251-10284)
1008 (#10285-10319)
1009 (#10320-10348)
1010 (#10349-10373)
1011 (#10374-10386)

TS-2068
(163/209 Programs in
Respective Libraries)

Tapes (C-60)
2001 (#20001-20060)
2002 (#20061-20082)
2003 (#20083-20120)
2004 (#20121-20163)

LarKen disks (5.25" DSDD)
2001 (#20001-20060)
2002 (#20061-20079)
2003 (#20080-20128)
2004 (#20129-20171)
2005 (#20172-20209)
2006 PIXEL PRINT PLUS!
FOR LKDOS

STING GRAPHICS SUPPORT PACKAGE
LARKEN DISK DOCTOR/Chambers
THE RLE GRAPHICS COLLECTION

The Pixel Print Plus! and Sting
Graphics Package are LKDOS
conversions and LOAD/SAVE
entirely to disc. All documents
are contained as Pixel Print
files on the respective disc.

The Disc Doctor was written by
George Chambers of the Toronto
Timex-Sinclair Users Club.

The RLE Grsphics Collection
contains 72 RLE files courtesy
of Bill Ferrebee and QRLKDOS,
Jack Dohany's QRL RLE file
handler converted to LKDOS.

Defective tapes/discs will be
replaced upon their return.

ALL \$4.00 EACH, POSTPAID

Send TS-1000 orders to:
Tim Ward
5142-D Ginkgo Dr SW
Tacoma WA 98439

Send TS-2068 orders to:
Tony Willing
PO BOX 199
Vashon WA 98070

REVIEWS

QL SURVIVOR'S SOURCE BOOK.

Bob Dyl sent me a copy to see
and ask if T/SNUG wanted to be
the publisher thereof, but I
said I did not think so and he
called Frank Davis and he
accepted. I do not know the
price but a letter or call to
Frank will get that. Frank's
address is:

FRANK DAVIS
513 E. Main
Psuru, IN 46970
Tele: (317) 473-2031

The BOOK consists of 24 pages
of single sided text and is
strictly a source listing for
QL HARDWARE SUPPLIERS; QL
PUBLICATIONS (major); QL
SOFTWARE SUPPLIERS; and QL USER
GROUPS.

This is not a book for someone
looking for information on
using a QL nor on programming
but is a listing of sources to
find the wherewithal to expand
a QL system. I would recommend
it for anyone that has a QL and
wants to have more and better
use of it and is willing to
spend time and money to do it.

INTERNATIONAL QL REPORT

A new QL MAGAZINE has shown up on the scene. The Inaugural issue showed up in June and is published by a group called SeaCoast Services. The editor is Robert Dyl, Sr. who formerly owned the now defunct English Micro Connection. He told me on the phone that this publication is not the newsletter of a user group but rather a money making venture of about 16 QL users.

The idea behind this magazine is to keep North American users abreast of what NEW QL PRODUCTS are currently being offered in Europe. Products are named and also the names, address and phone numbers of U.S. owners are given so that you can talk one-on-one with 'the guy that haa one'.

Featured were articles on GOLD CARD, QL KEYBOARD 90 INTERFACE, MINERVA ROM UPGRADE, QIMI MOUSE INTERFACE, D-I-Y Toolkit and many other software products and news. Subscription rates are \$10 per year US and Canada, \$20 for the rest of the world. Single issue rates are \$3 US and Canada, \$5 for the rest of the world.

The publication is in newsletter format and printed with a very professional look.

You may write to:

IQLR
15 KILBURN CT
NEWPORT, RI 02840
H401-849-3805

ARTICLES

T/SNUG, QUANTA,
And PD-QL Software
by Al Feng

Bob Swoger commented that he has catalogued about 300+ 2068/Spectrum programs in his "personal" library, and Steve Cooper claims that he has well over 80 meg of uncatalogued

2068/Spectrum programs! Bob thought it would be a good idea if I would compile a list of QL software that is available.

Unlike the 2068/Spectrum, it isn't a question of how much and/or what is cut there for the QL, because there are titles/programs for just about every conceivable application from the exceedingly mundane to the most exotic.

If your needs exceed the four Psion programs which were bundled with your QL, and you can't find what you want in a "commercial" program, then the odds are you will eventually be able to track it down in one of the PD disks.

At the present time, T/SNUG's PD-QL library consists of the single CATUG PDL disk.

If you would like a copy of the disk (for the current time), send a \$2.00 check made out to "Al Feng" and you will get not only the disk (specify format), but a coupon for \$2.00 off either QLUSTER or QLUMSI; or, a future T/SNUG PDL disk [if I'm still handling it and/or we ever expand our (QL library)!]:

Al Feng
15 Wake Robin Court
Woodridge, IL 60517

If we ever get "more" disks, then they will be available for \$2.00 for the first disk; and, \$1.00 for each subsequent disk ordered at the same time. Don't forget to specify your disk format (5.25" or 3.5").

If you are a group and want to contribute a disk(s), then you will receive "credits" against other disks (honest); but, please don't volunteer another group's disk(s).

OKAY. This brings us to the matter of the extensive QUANTA library ...

If you are not familiar with QUANTA, it is the UK's (and therefore the world's) primary QL user group.

With "apologies" to Roy Brereton, et al, I want to (finally) publicly voice my disdain for Paul Holmgren's DENIAL (to me) OF "FREE" ACCESS to the QUANTA library at the 1990 SMUGFEST and attempt to "charge" \$3.50 per disk despite the fact that I had my own disks, QL + drives, and had previously paid royalties on 90+ per cent of the software despite my having been a QUANTA member for four-plus years.

As far as I know, the \$3.50 charge stands despite the fact that there is no longer a charge for the library (NOTE: you do have to be a QUANTA member).

What am I saying?

If you are a QUANTA member (or, you have been thinking about joining so that you might acquire the QUANTA library), and you want "cheaper" access to the library, then write to:

Roy Brereton
QUANTA Librarian
94 Teignmouth Road
Clevedon, AVON
BS21 6DR
UNITED KINGDOM

and, ask him to appoint another North American Sub-Librarian.

I suggested to R. Brereton that a NESQLUG member would be an obvious choice since they have become an official sub-group. I presume that they would "charge" \$1.50 per disk.

I indicated to R. Brereton that (as an alternative) I accept the library and would "charge" \$2.00 for the first disk, and \$1.00 for each disk thereafter (if "ordered" at the same time). This is a disk/postage fee for ANYWHERE in North America for 3.5" 720K, 5.25" 720K or 5.25" 360K disks. The small "overage" for US disks will subsidize postage to Canada, Mexico, and Central America.

At the time that I am writing this, R. Brereton tells me that no one else has complained about the pricing! In fact, he

was quite defensive on behalf of Paul Holmgren. I suspect that this is in part because of Paul Holmgren's "visible" affiliation with SNUG.

Well, we know about SNUG ...

If you are as tired of the hanky-panky with the QUANTA library (or the "lost" SNUG library), and ...

If you want access to the QUANTA library at a lower price, then write to Roy Brereton and voice your thoughts on the matter.

The QL lives in North America as long as we all actively support it in a positive manner.

If you want to let the QL in North America go comatose then you don't have to do anything.

If you wish to elaborate on the preceding (or, comment on anything else!) then tell us about them. This space is available for YOUR REMARKS.

HAPPY TRAILS,
AND COMPUTING,
TO YOU ...

HAPPINESS IS A CONVERTED
T/S 1016 RAM THAT WORKS!

by
ANTHONY W. FARRELL
1/25 NEWPORT ROAD
SOUTH CLAYTON, VIC 3169
AUSTRALIA

(This is an addition to the two part article in Time Designs magazine in 1986 by Tim Stoddard. Editor)

Do you remember that I was having trouble with the conversion of my 16K RAM, the article was by Tim Stoddard in an issue of Time Designs in '86. Well as the heading says, I do have the converted RAM working correctly. I finished assembling it about an hour ago and gave it a test program to POKE 0's and 255 to all the memory locations and all seems well. It is sure a great

feeling to have success under my belt. Thanks Don for all your help, and for the help from Fred Stern and Tim Stoddard. I do not think I told you that Tim Stoddard wrote to me and said that he had received a letter from you but he had been very busy at work lately. He had been in the hardware field but had been moved to software and was in some kind of a learning curve, and so was very busy. Tim wrote out a special check list for me to check out my RAM conversion. I went through it but it did not help in my case.

It seems that one of the outputs of the 74LS157 was blown at least. I did not do too much checking when I found that blown gate. The 74LS393 was the most expensive chip at \$1.20 so I replaced them all. I also found that I had left a decoupling cap (.047uF) connecting pin 7 of the DRAM's to ground. This made the wave form look skewed instead of square and that was how I found the cap.

One thing that puzzles me is that I thought the LS393 pin 3 (LSB) would have toggled at the frequency of the clock input on pin 1. My Data book shows the LSB going high and low at the input frequency but on every chip that I probed, pin 3 just stays high. No doubt I will find a logic person who will enlighten me. Also I was puzzled as to how the board worked as a 32K RAM with the 64K chips at the half-way stage. Then I remembered the jumper "A" that was used in the 32K stage and removed for the 64K stage.

You wrote that some members had said that my RAM conversion problem might be because of the poor design of the board which messed up the timing of the REFRESH cycle. I do know about this possible problem. The bad design is because the REFRESH needs a delay of 50 to 100 nanoseconds to allow the address lines to stabilize (to stop "ringing") before the

REFRESH signal is applied. The good design way of achieving this would be to use a timer chip, but this pushes the cost up. So Sinclair used a resistor and a capacitor to give the delay. This works in theory but the resistor used has a tolerance of +/- 5%. And the capacitor also has a tolerance of some degree which I am not sure of. So the timing can be out by more than 5%, which theoretically could give timing troubles, especially when the board gets old and the components start to age.

In TIMELINEZ VOL 1 #2 July/August 1983 page 2 there is an article for a 64K RAM construction which uses a 74LS74 flip-flop and other control signals to give the correct delay, which is a more accurate way but is more expensive.

I will get down to the other RAM board conversion in a few days. I am a little tired of my "Memory Diet" so I will give myself a rest before I start the next board.

You may wonder why I am converting two RAM boards. Well, I intend to use my T/S 1000 for many years to come and they are getting scarce. Now that I can convert 16K's I am laughing. Also I had two defective 16K RAM's, and instead of repairing them as 16K's, I repaired them as 64K's.

Our Sinclair group here in Melbourne is doing some sums again regarding membership. We are short of financial members at the moment. The hall that they hire costs a fair few dollars every month and a few alternatives have been discussed. We could drop back to only having a meeting every second month but then someone might want to book the hall every month and we would lose our booking. And there are too many people at the meetings to go to someone's house. The club has Spectrums, QL's and an Amiga. Everyone laughs at the

mention of my ZX81 so I do not take it along.

CASSETTE LOAD/SAVE ROUTINE AND PROBLEMS FOR THE ZX81 Compiled by Donald S. Lambert.

While I have no statistics to back my thinking I believe that there are far more working with cassette than any other mass storage medium on either the ZX81 or the TS2068. While this is basically about the ZX81 there are some of the following that will also apply to the TS2068. I am trying to be as accurate as possible and if anyone has anything to contribute or suggestions or changes, please let me know. I do want this to be helpful and only by being correct is this possible. After I got started I found that I had far more material than I realized and this will not fit into one issue, so there will be more material later.

We will start with theory or at least a little theory so that you will know what the computer is looking for when it is waiting for the cassette signal to LOAD. It may not make much sense to all but does help to point out some of the possible problem areas.

Source: "A PRACTICAL GUIDE TO MACHINE LANGUAGE PROGRAMMING ON THE TIMEX/SINCLAIR 1500 AND 1000 (AND ZX81)" by David B. Wood.

The following material is from Chapter 15 starting page 135:

TAPE ENCODING

What does a bit look like on a T/S tape? A bit is composed of a series of 3.33 kilohertz pulses. It is high for 151 microseconds and low for 149 microseconds, so the total width (elapsed time) of 300 microseconds provides the 3.33 kilohertz tone.

A zero bit consists of a series of four of these pulses. The total width (time consumed) of a zero bit is 1.02 ms. A one

bit consists of a series of nine pulses. The total width of a one bit is 2.55 milliseconds.

A byte, as we all know, contains eight bits. The time between individual bits is 1.50 milliseconds.

The inter-byte spacing is virtually the same as the inter-bit spacing, so that if a bit is lost on tape read, every byte after will be out of step. The system simply assumes that each series of eight bits is a byte.

When tape LOAD is initiated, the system starts sampling the cassette input at 21 microsecond intervals. Note that this is almost exactly 1/3 of the horizontal scan rate of the TV. That is why this tape scan loop has such a distinctive fingerprint on your TV. The scan continues at this rate until a pulse is detected. Then after, 25 microseconds, the system starts sampling the tape at a higher rate: a little over 15 microseconds. The sampling frequency, once a pulse is detected, is about ten times the pulse width. An ideal pulse should thus provide about nine or ten sequential high samples. This should be followed by an equal number of low samples. The total number of sequential high, then low, then high, etc., are accumulated.

A one bit should provide more than twice as many samples as a zero bit. If less than 62 high pulses plus low hits are accumulated, the bit is rejected as noise. If the number of hits is between 62 and 148, the bit is assumed to be zero. Between 148 and 214 is assumed to be a one bit. If more than 214 hits are detected, the bit is rejected.

During the low state between pulses, the system will scan for up to 400 microseconds to make sure that another pulse isn't there. This means the inter-bit space of 1.5 milliseconds is more than a

millisecond longer than is necessary for the tape read to work. Thus the tape read/write speed could be shortened by about 30 percent by cutting one millisecond off the inter-bit space.

In spite of how it may appear to someone having tape reading problems, this tape read algorithm is quite insensitive to moderate distortion and to tape speed errors. The relative width of the high and low states of the pulses can change quite a bit, since lost hits in one state can be compensated for by extra hits in the other state. The error is 26 successive low hits.

Source: SYNCHRO-SETTE VOL. 1 #1
APRIL 1982

If you are loading a program and the volume is too high, the computer can receive distorted information and background noise may be picked up. The result of extreme high volume is that the screen goes blank.

If the volume is too low, some of the data can be missed. Even if the program seems to have loaded OK, the program will not run properly.

A proper load should be followed with (0/0) at the bottom of the screen.

Another factor that may affect loading is whether the recorder has a HIGH and LOW frequency switch. Computer data pulses are consistently of a high pitched frequency. This can be easily observed by unplugging the jack from the EAR socket of the recorder and listening to the sound the tape makes when played. If the switch is in the LOW position, the recorder is not allowed to emit the frequency of sound needed by the computer. The low pitched sounds however are sent to the computer and distort the input to the point where the program load is a failure.

If you think that your recorder may be the problem, try another

recorder. Borrow one from a friend if you can.

No volume adjustment is required when saving programs however. The recorder has a condenser microphone that automatically adjusts itself to the volume that is being inputted. It takes a second or two for this to happen and that is the reason why when you save programs, the screen pattern does not appear immediately. The computer is giving the volume level device in the recorder a chance to reach the correct threshold.

Never save a program at the beginning of the tape unless it is a leaderless tape. All other tapes have a beginning and ending portion made of none magnetic material. None magnetic material of course will not hold computer data.

Always make duplicate tapes. I cannot over stress the importance of back-ups, especially when writing programs.

If the program you are writing is long, a good procedure is to write about 10 lines and then save it on one cassette twice. Then write 10 more lines and save it again, but on a second tape twice. Keep doing this procedure back and forth between the two tapes until the program is finished. This way, if the computer bombs, the power fails or if there is a nuclear attack, the most you would have lost is 10 lines. I realize this can be time consuming but there comes a time in every programmer's life when he wishes he did it.

SYNCHRO-SETTE VOL. 1 #2
MAY 1982

If a program was recorded from a computer other than your own or from computer duplication equipment loads OK, but programs that were produced from your own computer do not load easily, it could be because:

1. The internal circuitry of the computer that controls the saving of the programs is defective. This is not usually the case but can happen. Since the programs that were produced from an outside source load all right, the programs you try to save can be recorded with various degrees of improper data pulses. Before blaming the problem on the computer, first investigate the procedures that follow.

2. The computer and/or cassette recorder are picking up excess noise from their Alternating Current power sources in the form of power spikes. These are caused by electrical machinery, such as florescent fixture transformers, air compressors, air conditioners, etc.

If you have the type of recorder that can be run by batteries, remove the AC power cord and insert the proper batteries. Write a short program and then save it on cassette. Try to reload it and see if this helps. It should make no difference if the recorder is on AC or DC when you are loading the program back into the computer. Some recorders may however, have a problem keeping the drive motor operating at a constant RPM when they are powered by pure DC current from batteries, so make sure the batteries are fresh.

If this does not help, then the DC power input into the computer may be the culprit. There are different methods of achieving this. The problems may be the 9-VDC power supply itself but again this is not usually the case. I replaced the 9-VDC power source for the computer with a 9-VDC battery such as the EVEREADY #276, the RAY-O-VAC or DURACELL #1603.

CAUTION - OBSERVE PROPER POLARITY when using this method. IMPROPER POLARITY MAY CAUSE DAMAGE TO THE COMPUTER.

Fortunately, the CRT (TV) does not have to be turned off while

you are saving a program because it imparts no electrical input to the computer.

SOLAR SYSTEM REVIEW
Modified by Joan Kealy
From the magazine
Computers and Teachers

If you have found an informational gap where you have forgot facts you once knew or if you simply yearn to be more knowledgeable about some area this program called 'solarsys' can actually review or refresh or tutor you in any subject. The subset of astronomy was selected because of my fondness for science fiction, but I realized I had long forgotten so much of the terminology and factual background even of our own universe. I got out a basic text on astronomy and tossed questions and answers into a basic template from a magazine called 'Computers and Teaching'."

If you are an astroengineer, then pick your own subject, delete the existing data statements and plug in the chosen info base. After typing the questions and answers into the program--now called 17th Century Comic Opera or whatever--and running with the program twice, you'll have embedded said info into your mind and six months later, rev up the program for review. You'll be surprised at your retention but regular reinforcement assures a solid expertise with an option to add more difficult information.

Sometimes retirees feel as if their brain is ALFZing out, but recall that constantly dealing with the same old knowledge base at work can result in burnout too. New input to the brain revitalizes it and extends your confidence.

SOLARS.B1
1 CLS : PRINT "" 3K
REVIEW OF SOLAR SYSTEM"
2 RESTORE 3E3
5 LET SC=0

```

6 POKE VAL "23658",VAL "8":
GO SUB VAL "8000": CLS
8 DIM A$(VAL "25",VAL
"100"): DIM B$(VAL "25",VAL "3
1"): DIM Y(VAL "25")
20 FOR I=SGN PI TO VAL "25":
READ A$(I),B$(I): NEXT I
30 FOR J=SGN PI TO VAL "25"
35 LET X=INT (RND*VAL "25")+
SGN PI
40 FOR Z=SGN PI TO VAL "25"
50 IF X=Y(Z) THEN GO TO VAL
"35"
55 NEXT Z
60 PRINT : PRINT A$(X)
68 LET D$=""
"
70 INPUT C$: LET C$=C$+D$: LE
T C$=C$(SGN PI TO VAL "31")
72 IF C$=B$(X) THEN PRINT : P
APER VAL "5": "YOU'RE RIGHT!":LE
T Y(X)=X: PAUSE VAL "180": GO T
O VAL "76"
74 PRINT INK VAL "9": PAPER V
AL "3": "SORRY!":B$(X): LET SC=
SC+SGN PI: PAUSE VAL "180"
76 NEXT J
78 CLS
80 PRINT PAPER VAL "6": "OUT O
F 25 QUESTIONS, YOU MISSED":SC:
"YOUR GRADE IS ":VAL "100"-(S
C*VAL "4")
90 PRINT "IF YOU ARE DISAPPO
INTED WITH YOUR GRADE, A RET
AKE WILL RESULT IN ABOUT 15 POIN
T GROWTH."
100 STOP
3000 REM QUESTIONS ON SOLAR SYS
TEM
3005 DATA "GREATEST EGYPTIAN AS
TRONOMER?", "JULIUS PTOLEMY"
3010 DATA "TERM FOR PTOLEMY'S M
ODEL OF UNI-VERSE?", "GEOCENTRIC
"
3015 DATA "AFTER 1400 YRS. POLI
SH MONK WHO REJECTED GEOCENTRIC
MODEL?", "NICHOLAS COPERNICUS"
3020 DATA "WHO FORMULATED 3 LAW
S FOR MOTION OF PLANETS?", "JOHAN
NES KEPLER"
3025 DATA "ITALIAN WHO RECENTED
HIS HELIO- CENTRIC THEORY UNDER
RELIGIOUS PRESSURE?", "GALILEO
GALILEI"
3030 DATA "FORMAL NAME OF THE N
ORTH STAR?", "POLARIS"
3035 DATA "BECAUSE OF PRECESSIO
N IN 12,000 YRS. THE NORTH STAR
WILL BE?", "VEGA"
3040 DATA "THE EQUATORIAL EQUAT
OR IS 7,927 MILES BUT THE POLAR
EQUATOR IS?", "7,900"
3045 DATA "EARTH'S ROTATION IS
EASTWARD OR RE A CLOCK?", "COUNT
ERCLOCKWISE"

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3050 DATA "DUE TO ROTATION PREV
ALING WINDS IN U.S. ARE FROM?",
"SOUTHWEST"
3055 DATA "APPARENT PATH OF SU
N'S 1 YR. TRIP THRU THE STAR
S IS CALLED?", "ECLIPITIC"
3060 DATA "NEAREST STAP TO EART
H?", "PROXIMA"
3065 DATA "PROXIMA'S DISTANCE I
N LIGHT YRS.?", "OVER 4"
3070 DATA "TERM FOR ONE BODY TR
AVELING IN ORBIT AROUND ANOTHE
R?", "REVOLUTION"
3075 DATA "TERM USED WHEN BODY
TURNING ON INTERNAL AXIS?", "RO
TATION"
3080 DATA "EARTH IS FARTHER FRO
M SUN IN JULY THAN JAN. BY M
ILES?", "3 MILLION"
3085 DATA "EARTH'S EQUATOR EXTE
NDED OUT TO STARS?", "CELESTIAL
EQUATOR"
3090 DATA "TILT OF EARTH'S AXI
S FROM PERPENDICULAR?", "23.5 DE
GREES"
3095 DATA "OUR SOLAR SYSTEM IS
MOVING THRU MILKY WAY AT 12 MPS
OR MPH?", "43,200 MPH"
3100 DATA "LIGHT TRAVELS IN MILES PER SEC
.?", "186,000"
3105 DATA "TWO PLANETS CLOSER T
O SUN THAN EARTH?", "MERCURY AN
D VENUS"
3110 DATA "DARK SIDE OF MERCUR
Y IS ALWAYS WITHIN FEW DEGREES
OF PERFECT 0 OR ABOUT?", "-440 D
EGREES"
3115 DATA "ONE ASTRONOMICAL UNI
T (A.U.)=?", "93 MILLION MILES"
3120 DATA "ONE A.U. IS BASED ON
THE MEAN DISTANCE OF EARTH FR
OM?", "THE SUN"
3125 DATA "KEPLER'S 3RD LAW REL
ATING SIZE OF ORBIT TO TIME OF
REVOLUTION IS CALLED?", "HARMON
IC LAW"
3130 DATA "ABOUT 99.8% OF SOLAR
SYSTEM'S MASS IS CONCENTRATED
IN ?", "THE SUN"
3135 DATA "ABOUT HALF OF .2% OF
MASS OF OUR SOLAR SYSTEM IS CON
CENTRATED IN WHICH PLANET?", "JU
PITER"
8000 PRINT "NOTE THAT FIRST A
ND LAST NAMES ARE EXPECTED FOR
ANSWERS, NO INITIALS", "OF
COURSE, COMPUTERS ARE VERY ARB
ITARY"
8005 GO SUB VAL "9986"
9986 PRINT AT VAL "21",VAL
"7": "PRESS ANY KEY": PAUSE NOT
PI: RETURN
9987 STOP
9992 CLEAR : RANDOMIZE USR 100:
SAVE "SOLARS.BI" LINE SGN PI

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